

CLAIMS

1. A ferritic stainless steel good of machinability, which has:
a chemical composition consisting of 0.001-0.1 mass % of C, Si up to 1.0 mass %, Mn up to 1.0 mass %, 15-30 mass % of Cr, Ni up to 0.60 mass %, 0.5-6.0 mass % of Cu, optionally one or more of Sn and In not less than 0.005 mass % in total, and the balance being Fe except inevitable impurities; and
the structure that Cu-enriched particles with concentration of C not less than 0.1 mass % or concentration of Sn and/or In not less than 10 mass % are dispersed at a ratio of 0.2 vol. % or more in a ferritic matrix.
2. A martensitic stainless steel good of machinability, which has:
a chemical composition consisting of 0.01-0.5 mass % of C, Si up to 1.0 mass %, Mn up to 1.0 mass %, 10-15 mass % of Cr, Ni up to 0.60 mass %, 0.5-6.0 mass % of Cu, optionally one or more of Sn and In not less than 0.005 mass % in total, and the balance being Fe except inevitable impurities; and
the structure that Cu-enriched particles with concentration of C not less than 0.1 mass % or concentration of Sn and/or In not less than 10 mass % are dispersed at a ratio of 0.2 vol. % or more in a martensitic matrix.
3. The ferritic or martensitic stainless steel defined by Claim 1 or 2, wherein the composition further contains at least one or more of 0.2-1.0 mass % of Nb, 0.02-1 mass % of Ti, 0-3 mass % of Mo, 0-1 mass % of Zr, 0-1 mass % of Al, 0-1 mass % of V, 0-0.005 mass % of B and 0-0.05 mass % of rare earth metals (REM).
4. A method of manufacturing a ferritic or martensitic stainless steel sheet good of machinability, which comprises the steps of:
providing a stainless steel consisting of 0.001-0.5 mass % of C, Si up to 1.0 mass %, Mn up to 1.0 mass %, 10-30 mass % of Cr, Ni up to 0.60

mass %, 0.5-6.0 mass % of Cu, optionally one or more of Sn and In not less than 0.005 mass % in total, and the balance being Fe except inevitable impurities; and

aging said ferritic or martensite stainless steel at a temperature within a range of 500-900°C for one hour or longer one or more times on any stage after a hot-rolling step until a forming step to a final product,

whereby Cu-enriched particles with concentration of C not less than 0.1 mass % or concentration of Sn and/or In not less than 10 mass % were dispersed in a ferritic or martensitic matrix by said aging.